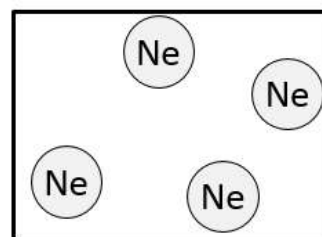
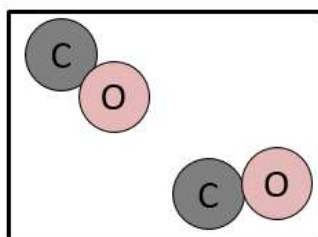
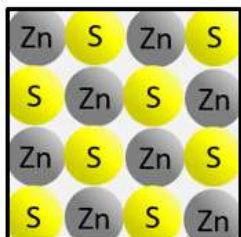
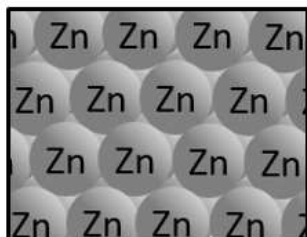


## Chapter 1 Practice

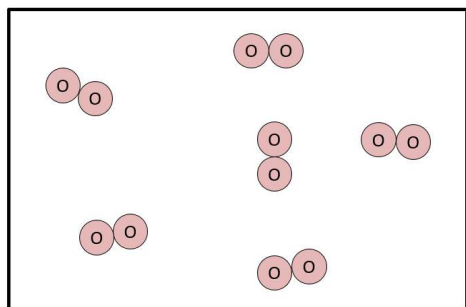
### 1.2 Describing Matter

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1. In the images below, the spheres represent atoms. The symbols within the spheres indicate the type of atom present. Describe the components of each box as an element or a compound.



2. In the image below, each sphere represents an oxygen atom. Does this picture indicate an element or a compound? How many atoms are present? How many molecules are present?



3. How does the arrangement of particles differ between a solid, liquid, and gas?

4. What is the difference between a homogeneous mixture and a heterogeneous mixture?

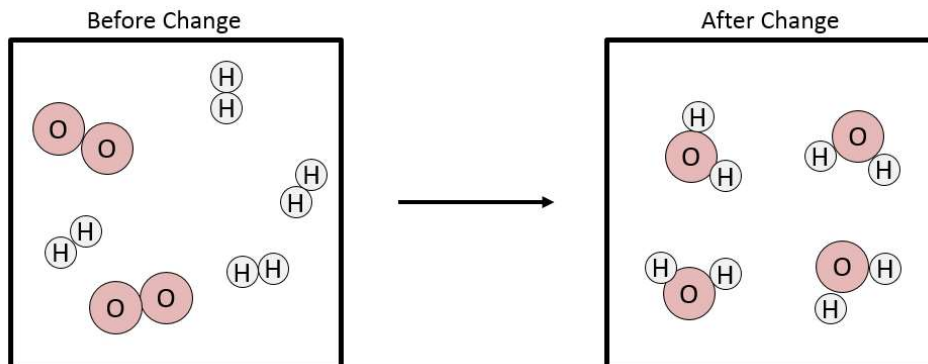
5. Identify each of these properties as physical or chemical:

- The temperature of the water in a lake is 15 °C.
- When paper burns, it forms two new compounds, carbon dioxide and water.
- A tire weighs 23 pounds.
- hydrogen gas reacts with oxygen gas to form water.
- Ice melts at 0 °C.

### 1.3 Energy and Change

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6. The image below represents the atoms of a substance before and after a change occurs. Use this image to complete the table below.



	Before Change	After Change
Is this an element, a compound, or a mixture?		
How many atoms are present?		
How many molecules are present?		

7. Is the change shown in Question 6 a chemical change or a physical change?

8. In the change shown in Question 6, hydrogen gas and oxygen gas combine to form water. This change releases heat energy. Based on this, is this reaction endothermic or exothermic? Which has more potential energy—hydrogen gas and oxygen gas or water? Which is more stable?

### 1.4 The Scientific Method

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9. What is the difference between a hypothesis and a theory?

10. What does “paradigm” mean? Which is most closely related to a paradigm—a hypothesis, a theory, a scientific law, or an experiment?